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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/852,158 05/06/97 MATHUR

S MS1-151US

022801 TM02/0606
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EXAMINER

OPIE, G

ART UNIT

PAPER NUMBER

2151

DATE MAILED:

06/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/852,158

Examiner

George L. Opie

Applicant(s)

Mathur et al.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ☐ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ☐ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ☐ is/are objected to.
- 8) ☐ Claim(s) ☐ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ☐ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ☐ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
- ☐ received.
 - ☐ received in Application No. (Series Code / Serial Number) ☐.
 - ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☐ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ☐
- 17) ☐ Interview Summary (PTO-413) Paper No(s). ☐
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☒ Other: Text Docs for USP5,835,765 USP5,826,082 USP5,815,702

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DETAILED ACTION

This office action is responsive to Applicant's request for reconsideration, filed 20 March 2001.

1. Request for copy of Applicant's response on floppy disk:
Please help expedite the prosecution of this application by including, along with your amendment response in paper form, an electronic file copy in WordPerfect, Microsoft Word, or in ASCII text format on a 3½ inch IBM format floppy disk. Please include all pending claims along with your responsive remarks. Only the paper copy will be entered -- your floppy disk file will be considered a duplicate copy. Signatures are not required on the disk copy. The floppy disk copy is not mandatory, however, it will help expedite the processing of your application. Your cooperation is appreciated.
2. The U.S. Patents used in the art rejections below have been provided as text documents which correspond to the U.S. Patents. The relevant portions of the text documents are cited according to page and line numbers in the art rejections below. For the convenience of Applicant, the cited sections are highlighted in the *text documents*. Consistent with Office procedure, the U.S. Patents corresponding to the *text documents* are also included with this action.
3. Claim Rejections - 35 U.S.C. § 103
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto (U.S. Patent 5,835,765) in view of Kubo (U.S. Patent 5,881,284).

As to claim 1, Matsumoto teaches a method of controlling memory usage in a computer system (effectively utilizing the primary storage, p18 23-27) having limited physical memory (storage area has a finite size, p8 52-54) wherein one or more application programs execute in conjunction with an operating system (execute plural application programs in parallel, p8 45) the method comprising:

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the operating system wielding control over said one or more application programs (resource manager 15 checks the amount of memory used, p15 28-33) to reduce memory usage (program ends immediately, p8 52-54).

Matsumoto does not explicitly disclose the additional limitations detailed below. Kubo teaches setting a plurality of memory thresholds (threshold values are provided, p4 30-42).

It would have been obvious to combine the multiple threshold scheme as taught by Kubo with Matsumoto's teachings because an incremental governor provides an increasing (systematic escalation) of constraints on program operations that corresponds with the machine parameters, thereby facilitating the most efficacious processing of user applications by enabling executions to continue to certain times at which commensurate measures are triggered to maintain system integrity.

As to claims 2-6, "Official Notice" is taken that the limiting, closing, or terminating of a program are well known in the art (MPEP2144.03). It would have been obvious to combine the limiting, closing, or terminating capability with the combined system of Matsumoto and Kubo because these operations reduce an applications memory usage.

As to claim 7, "Official Notice" is taken that reclaiming unused stack memory is well known in the art (MPEP2144.03). It would have been obvious to combine the unused stack memory reclamation with the Matsumoto/Kubo system because these operations reduce an applications memory usage, thereby improving system performance.

As to claim 8, one skilled in the software engineering art, working on memory conservation, would have included a provision for discarding read-only memory. The practice of efficiently managing memory directs disposal of storage sections that are not currently in use so that other pages can utilize the unused locations which are reserved but not needed/exploited.

As to claims 9-16, note the rejections of claims 1-8 above. Claims 9-16 are the same as claims 1-8, except claims 9-16 are computer program product claims and claims 1-8 are method claims.

As to claim 17, note the rejections of claims 5-8 above.

As to claims 18 and 19, the recitations regarding the reclaiming and discarding in connection with further thresholds would have been obvious modifications -- variations on claim 17 above.

As to claim 20, note the rejections of claims 3-5 above.

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As to claim 21, note the rejection of claim 20. Claim 21 is basically the same as claim 20, but for the difference of the "requiring" in lieu of "prompting" a user to select the respective application at issue, which would have been an obvious modification for one skilled in the art.

As to claim 22, note the discussion of claim 17 above. Claim 22 is the same as claim 17, except claim 22 is a computer program product claim and claim 17 is a method claim.

As to claim 23, note the discussion of claim 1 above; claim 23 is an apparatus claim and claim 1 is a method claim. Claim 23 is the same as claim 1, but for the added limitation of virtual memory sans secondary storage which would have been an obvious modification as it has been known in the art.

As to claims 24-30, note the discussion of claims 2-8 above. Claims 24-30 are the same as claims 2-8 respectively, except claims 24-30 are apparatus claims and claims 2-8 are method claims.

As to claim 31, note the rejection of claim 20 which incorporates the claim 17 discussion too. Claim 31 is the same as claim 20, except claim 31 is an apparatus claim and claim 20 is a method claim.

As to claims 32 and 33, note the rejection of claim 2, which incorporates claim 1 limitations. Claim 32 is the same basically as the features in claim 2 sans the 2nd threshold.

As to claims 34-35, "Official Notice" is taken that the message loop facility for communicating messages to and from a program is well known in the art (MPEP2144.03).

As to claims 36-39, note the discussion of claims 32-35 above. Claims 36-39 are the same as claims 32-35, except claims 36-39 are computer program product claims and claims 32-35 are method claims.

5. Claim 40 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kannan et al. (US Patent 5,815,702) in view of Bishop et al. (US Pat 5,826,082).

As to claim 40, Kannan (p4 52 - p5 27) teaches an application program (word processor) that resides in a computer-readable memory (location that stores ... the application) for execution by a processor in conjunction with an operating system (operating system 111) the application program having a message loop that receives messages from an operating system message loop that receives events or messages from the

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operating system) the application program being responsive to a particular message received through its message loop (receives from the operating system ... and provides them to the application).

Kannan does not explicitly disclose the additional limitations detailed below. Bishop teaches an application operation that is programmed to reduce its current use of memory (resource manager determines in decision block 204 ... suspend a prior request, p4 31-38). It would have been obvious to combine the memory constraining as taught by Bishop with the teachings of Kannan because the application memory minimization performed through the messaging system is an unobtrusive/transparent scheme for maintaining operations within the system's storage parameters.

6. Response to Applicant's Arguments:

Applicant's remarks have been considered, but are deemed to be moot in view of the new grounds of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Opie at (703) 308-9120 or via e-mail at *George.Opie@uspto.gov*. Internet e-mail should not be used where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the Applicant. Sensitive data includes confidential information related to patent applications.



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